	Document ID	Title
1	US 20050009949 A1	Process for producing biodegradable polyester
2	US 20050009157 A1	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
3	US 20050009156 A1	Polyhydroxyalkanoate synthase and gene encoding the same
4	US 20050009155 A1	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
5	US 20040185047 A1	Anti- TNF antibodies, compositions, methods and uses
6	US 20040146998 A1	Transformant and process for producing polyester by using the same
7	US 20040018593 A1	Anti-RELP fusion antibodies, compositions, methods and uses
8	US 20030233677 A1	Modification of fatty acid metabolism in plants
9	US 20030228669 A1	Transgenic microbial polyhydroxyalkanoate producers
10	US 20030167532 A1	OAR polynucleotides, polypeptides and their use in PHA production in plants
11	US 20030124692 A1	Polyhydroxyalkanoate synthase and gene encoding the same
12	US 20030092141 A1	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
13	US 20030087413 A1	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
14	US 20030082777 A1	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
15	US 20030077746 A1	Polyhydroxyalkanoate synthase and gene encoding the same enzyme

	Document ID	Title
16	US 20030073147 A1	Method and device for trichomonas detection
17	US 20030049806 A1	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
18	US 20020098565 A1	Polyhydroxyalkanoate synthase and gene encoding the same
19	US 20010055795 A1	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
20	US 20010053544 A1	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
21	US 20010046692 A1	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
22	US 6812013 B2	Polyhydroxyalkanoate synthase and gene encoding the same
23	US 6808910 B2	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
24	US 6806401 B2	OAR polynucleotides, polypeptides and their use in PHA production in plants
25	US 6803220 B2	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
26	US 6803219 B2	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
27	US 6620601 B1	Methods for transformation of plants, transformed plants and processes for preparation of polyesters
28	US 6593116 B1	Transgenic microbial polyhydroxyalkanoate producers
29	US 6586658 B1	Modification of fatty acid metabolism in plants
30	US 6492134 B1	Method for producing polyhydroxyalkanoates in recombinant organisms

	Document ID	Title
31	US 6485951 B2	Polyhydroxyalkanoate synthase and gene encoding the same enzyme
32	US 6475734 B1	Polyhydroxyalkanoate synthase genes
33	US 5981257 A	Polyester synthase gene and process for producing polyester

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  FILE 'MEDLINE, EMBASE, BIOSIS' ENTERED AT 13:17:56 ON 26 JAN 2005
L1          3667 S HANSENULA
L2          5066 S KLUYVEROMYCES
L3           428 S PHAFFIA
L4          9018 S PICHIA
L5         18308 S SCHIZOSACCHAROMYCES
L6           464 S SCHWANNIOMYCES
L7          3651 S TRICHOSPORON
L8          1888 S YARROWIA
L9        108789 S CANDIDA
L10        34269 S "RECOMBINANT PROTEIN EXPRESSION" OR "RECOMBINANT PROTEIN"
L11         1737 S CHEMICAL PRODUC?
L12        41518 S POLYESTER OR HYDROXYALKAN? OR HYDROXYBUT? OR HYDROXYHEXAN?
L13       107713 S ENZYM? (S) SYNTHESIS
L14          160 S (L1 OR L2 OR L3 OR L4 OR L5 OR L6 OR L7 OR L8 OR L9) A
L15          108 DUP REM L14 (52 DUPLICATES REMOVED)
L16            3 S POLYHDROXYALKANOATE
L17            2 DUP REM L16 (1 DUPLICATE REMOVED)
L18         1670 S POLYHYDROXYALKAN?
L19            2 S L15 AND L18
L20            5 S L18 AND (L1 OR L2 OR L3 OR L4 OR L5 OR L6 OR L7 OR L8 O
L21            3 DUP REM L20 (2 DUPLICATES REMOVED)
L22          968 S L12 AND L18
L23            1 S L22 AND L10
L24       189297 S (TRANSFORM? OR TRANSDUCED) (S) CELL
L25          661 S L24 AND (L1 OR L2 OR L3 OR L4 OR L5 OR L6 OR L7 OR L8 O
L26            2 S L25 AND L12
L27            2 DUP REM L26 (0 DUPLICATES REMOVED)
```

L19 ANSWER 1 OF 2 MEDLINE on STN
ACCESSION NUMBER: 2002154632 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11886758
TITLE: Synthesis of **polyhydroxyalkanoate** in the peroxisome of **Pichia** pastoris.
AUTHOR: Poirier Yves; Erard Nadine; MacDonald-Comber Petetot Jean
CORPORATE SOURCE: Laboratoire de Biotechnologie Vegetale, Institut d'Ecologie, Universite de Lausanne, CH-1015 Lausanne, Switzerland.. yves.poirier@ie-bpv.unil.ch
SOURCE: FEMS microbiology letters, (2002 Jan 22) 207 (1) 97-102. Journal code: 7705721. ISSN: 0378-1097.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200204
ENTRY DATE: Entered STN: 20020312
Last Updated on STN: 20020501
Entered Medline: 20020430

AB **Polyhydroxyalkanoates** (PHAs) are polyesters naturally produced by bacteria that have properties of biodegradable plastics and elastomers. A PHA synthase from Pseudomonas aeruginosa modified at the carboxy-end for peroxisomal targeting was transformed in **Pichia** pastoris. The PHA synthase was expressed under the control of the promoter of the P. pastoris acyl-CoA oxidase gene. Synthesis of up to 1% medium-chain-length PHA per g dry weight was dependent on both the expression of the PHA synthase and the presence of oleic acid in the medium. PHA accumulated as inclusions within the peroxisomes. P. pastoris could be used as a model system to study how peroxisomal metabolism needs to be modified to increase PHA production in other eukaryotes, such as plants.

L19 ANSWER 2 OF 2 EMBASE on STN
ACCESSION NUMBER: 2003230423 EMBASE
TITLE: Biodegradation of microbial and synthetic polyesters by fungi.
AUTHOR: Kim D.Y.; Rhee Y.H.
CORPORATE SOURCE: Y.H. Rhee, Department of Microbiology, Chungnam National University, Daejeon 305-764, Korea, Republic of. yhrhee@cnu.ac.kr
SOURCE: Applied Microbiology and Biotechnology, (2003) 61/4 (300-308).
Refs: 84
ISSN: 0175-7598 CODEN: AMBIDG
COUNTRY: Germany
DOCUMENT TYPE: Journal; (Short Survey)
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB A variety of biodegradable polyesters have been developed in order to obtain useful biomaterials and to reduce the impact of environmental pollution caused by the large-scale accumulation of non-degradable waste plastics. **Polyhydroxyalkanoates**, poly(ε-caprolactone), poly(L-lactide), and both aliphatic and aromatic polyalkylene dicarboxylic acids are examples of biodegradable polyesters. In general, most aliphatic polyesters are readily mineralized by a number of aerobic and anaerobic microorganisms that are widely distributed in nature. However, aromatic polyesters are more resistant to microbial attack than aliphatic polyesters. The fungal biomass in soils generally exceeds the bacterial biomass and thus it is likely that fungi may play a considerable role in degrading polyesters, just as they predominantly perform the decomposition

of organic matter in the soil ecosystem. However, in contrast to bacterial **polyester** degradation, which has been extensively investigated, the microbiological and environmental aspects of fungal degradation of polyesters are unclear. This review reports recent advances in our knowledge of the fungal degradation of microbial and synthetic polyesters and discusses the ecological importance and contribution of fungi in the biological recycling of waste polymeric materials in the biosphere.

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ANSWER 1 OF 9 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2003176912 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12694440
TITLE: Non-conventional methods for the control of post-harvest pear diseases.
AUTHOR: Mari M; Bertolini P; Pratella G C
CORPORATE SOURCE: CRIOF, University of Bologna, V. Gandolfi, Cadriano, Bologna, Italy.. mari@agrsci.unibo.it
SOURCE: Journal of applied microbiology, (2003) 94 (5) 761-6. Ref: 56
Journal code: 9706280. ISSN: 1364-5072.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 20030417
Last Updated on STN: 20030730
Entered Medline: 20030729

AB Pears are highly perishable products, especially during the post-harvest phase, when considerable losses can occur. Among the fungal diseases, blue mold caused by Penicillium expansum, grey mould caused by Botrytis cinerea, Mucor rot caused by Mucor piriformis are common on pear fruits. Other (weak) pathogens like Phialophora malorum, Alternaria spp., and Cladosporium herbarum tend to infect wounds and senescent fruits. A post-harvest fungicide treatment can reduce decay but effectiveness decreases with the appearance of resistant strains. There is a clear need to develop new and alternative methods of controlling post-harvest diseases. The emerging technologies for the control of post-harvest fungal diseases are essentially threefold: application of antagonistic microorganisms, application of natural antimicrobial substances and application of sanitizing products. Two biological control products, Aspire (**Candida** oleophila I-182) (Ecogen, Langhorne, PA, USA) and Bio-Save 110 (Pseudomonas syringae) (EcoScience, Worcester, MA, USA; formerly Bio-Save 11) are currently registered in the USA for post-harvest application to pears. Other potential biocontrol agents have been isolated from fruit and shown to suppress post-harvest decay in pear. It is important that evaluation of these microorganisms be carried out in a product formulation because the formulation may improve or diminish antagonistic efficacy depending on the concentration of **chemical product** and the duration of exposure to the treatment. Plants produce a large number of secondary metabolites with antimicrobial effects on post-harvest pathogens. Detailed studies have been conducted on aromatic compounds, essential oils, volatile substances and isothiocyanates, with encouraging results. In particular, allyl-isothiocyanate used as a volatile substance, controls blue mould in 'Conference' and 'Kaiser' pear inoculated with a thiabendazole-resistant strain. Sanitizing products such as chlorine dioxide, peracetic acid and ozone have considerable fungicidal activity against P. expansum and M. piriformis, depending on the concentration of **chemical product** and the duration of exposure to the treatment. Sanitizing solutions can be integrated easily with current handling and storage practices; however, further research is required to define the effective procedures better.

L24 ANSWER 2 OF 9 EMBASE on STN DUPLICATE 2
ACCESSION NUMBER: 2004053946 EMBASE
TITLE: Screening of new antifungal compounds in a collection of **chemical products**.

AUTHOR: Lemriss S.; Marquet B.; Ginestet H.; Lefeuvre L.; Fassouane A.; Boiron P.

CORPORATE SOURCE: P. Boiron, Center for Microbial Ecology, Faculte de Pharmacie, Universite Claude Bernard Lyon 1, 8, avenue Rockefeller, 69373 Lyon Cedex 08, France

SOURCE: Journal de Mycologie Medicale, (2003) 13/4 (189-192).
Refs: 11
ISSN: 1156-5233 CODEN: JMYME5

COUNTRY: France
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English; French

AB The antifungal activity of eighteen synthetic compounds belonging to a collection of **chemical products** has been tested against six fungal species [**Candida** albicans ATCC 10231, **Candida** tropicalis R2 CIP 1275.81 (an amphotericin B-nystatin resistant strain), Aspergillus fumigatus CIP 1082.74, Aspergillus niger ATCC 16404, Fusarium oxysporum CIP 625.72 and Trichophyton rubrum CIP 2043.92] using the agar disk method and two test media (casitone medium and YMA medium). Ten **chemical products** (55% of the synthetic compounds tested) were shown to have an antifungal activity. Among them, one compound called MI showed a strong antifungal activity against all fungi tested. The antifungal activity of M1 was further characterized by determining the minimun inhibitory concentration (MIC) against the six fungal species selected using broth microdilution method and also two test media described above. The susceptibility of C. tropicalis R2 CIP 1275.81 and F. oxysporum CIP 625.72 was better for the M1 product than amphotericin B on both test media. Furthermore, M1 was more active than amphotericin B in inhibiting growth on YMA medium for C. albicans ATCC 10231 and A. fumigatus CIP 1082.74, but for A. niger ATCC 16404, best inhibition was observed on casitone medium. Moreover, according to literature the MIC of M1 was remarkable in comparison to the antifungal agents currently available for clinical use other than amphotericin B. These promising in vitro data open the way to further investigations to study toxicity and in vivo antifungal activity.

L24 ANSWER 3 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN

ACCESSION NUMBER: 2000:296489 BIOSIS
DOCUMENT NUMBER: PREV200000296489

TITLE: Isolation of thermotolerant ethanologenic yeasts and use of selected strains in industrial scale fermentation in an Egyptian distillery.

AUTHOR(S): Abdel-Fattah, W. R.; Fadil, M.; Nigam, P.; Banat, I. M. [Reprint author]

CORPORATE SOURCE: Biotechnology Research Group, University of Ulster, Coleraine, BT52 1SA, UK

SOURCE: Biotechnology and Bioengineering, (June 5, 2000) Vol. 68, No. 5, pp. 531-535. print.
CODEN: BIBIAU. ISSN: 0006-3592.

DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Jul 2000
Last Updated on STN: 7 Jan 2002

AB An enrichment and isolation program for new ethanol-producing thermotolerant yeasts as well as a screening program of some known thermotolerant strains resulted in the selection of several strains capable of growth at 40-43degreeC. Among these strains four grew and fermented sugar cane molasses at 43degreeC under batch conditions with sugar-conversion efficiencies >94% and ethanol concentrations 6.8-8.0% (w/v). The two best-performing strains, a Saccharomyces cerevisiae F111

and a **Kluyveromyces** marxianus WR12 were used in eight 87.5 m3 fermentation runs (four using each strain) for industrial ethanol production in an Egyptian distillery using sugar cane molasses. Mean ethanol production was 7.7% and 7.4% (w/v), respectively, with an added advantage of cooling elimination during fermentation and higher ethanol yields compared to the distillery's S. cerevisiae SIIC (ATCC 24855) strain in use. The isolate S. cerevisiae F111 was subsequently adopted by the distillery for regular production with significant economical gains and water conservation.

L24 ANSWER 4 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 2000:324674 BIOSIS
DOCUMENT NUMBER: PREV200000324674
TITLE: Biosynthesis of citric acid by **Yarrowia** lipolytica repeat-batch culture on ethanol.
AUTHOR(S): Arzumanov, T. E.; Shishkanova, N. V.; Finogenova, T. V. [Reprint author]
CORPORATE SOURCE: IBPM, p-t Nauki 5, Pushchino, Moscow region, 142290, Russia
SOURCE: Applied Microbiology and Biotechnology, (May, 2000) Vol. 53, No. 5, pp. 525-529. print.
CODEN: AMBIDG. ISSN: 0175-7598.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 2 Aug 2000
Last Updated on STN: 7 Jan 2002

AB After analysis of batch culture and identification of the ways for prolongation of citric acid active synthesis by yeast, repeat-batch (RB) cultivation was suggested. **Yarrowia** lipolytica strain RB cultivation was studied and optimal conditions for cultivation selected. It was shown that when applying RB cultivation, better results were obtained than for batch cultivation. The activity of the culture remained stable after cultivation for more than 700 h. Comparative analysis of enzyme activities confirmed the regularity of the effect described, as the activity of practically of all the enzymes participating in ethanol oxidation and citric acid biosynthesis remained stable over time during RB cultivation. Advantages of RB cultivation for the production of citric acid by yeast are discussed.

L24 ANSWER 5 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 1996:122057 BIOSIS
DOCUMENT NUMBER: PREV199698694192
TITLE: Production of D-beta-hydroxyisobutyric acid from isobutyric acid by **Candida** rugosa.
AUTHOR(S): Lee, In Young; Hong, Won Kyoung; Hwang, Young Bo; Kim, Chul Ho; Choi, Eui Sung; Rhee, Sang Ki; Park, Young Hoon [Reprint author]
CORPORATE SOURCE: Korea Res. Inst. Biosci. Biotechnol., KIST, P.O. Box 115, Yusong, Taejon, South Korea
SOURCE: Journal of Fermentation and Bioengineering, (1996) Vol. 81, No. 1, pp. 79-82.
CODEN: JFBIEX. ISSN: 0922-338X.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 27 Mar 1996
Last Updated on STN: 2 May 1996

AB Production of D-beta-hydroxyisobutyric acid (D-HIBA) from isobutyric acid (IBA) was investigated using **Candida** rugosa IFO 0750. Cell growth and D-HIBA production decreased as the substrate concentration increased. A considerable degradation of D-HIBA was observed when the substrate, IBA, was depleted in the medium. Specific production rate Of D-HIBA increased as glucose concentration decreased, while the conversion yield of IBA to D-HIBA showed an opposite trend. With a controlled

feeding of IBA and glucose, a high titer of D-HIBA (100 g/l) could be obtained by a fed-batch cultivation of **Candida** rugosa.

L24 ANSWER 6 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 1995:483292 BIOSIS
DOCUMENT NUMBER: PREV199598497592
TITLE: Catabolite repression of induction of aldose reductase activity and utilization of mixed hemicellulosic sugars in **Candida** guilliermondii.
AUTHOR(S): Sugai, Juliet K.; Delgenes, Jean-Philippe [Reprint author]
CORPORATE SOURCE: Lab. Biotechnol. l'Environnement, INRA, Ave. Etangs, 11100 Narbonne, France
SOURCE: Current Microbiology, (1995) Vol. 31, No. 4, pp. 239-244. CODEN: CUMIDD. ISSN: 0343-8651.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 9 Nov 1995
Last Updated on STN: 9 Nov 1995

AB NADPH-dependent aldose reductase activity induced by D-xylose or L-arabinose was detected in cell-free extracts of **Candida** guilliermondii, but only negligible activities were observed if D-glucose served as carbon source. The induction of aldose reductase activity on mixed sugars was investigated under resting cell conditions. D-Glucose repressed enzyme induction by D-xylose or L-arabinose to varying degrees, and L-arabinose inhibited enzyme induction by D-xylose. During incubation in a mixture of D-xylose-D-glucose, glucose consumption by cells was fast and simultaneous with D-xylose utilization. Repression of D-Xylose consumption by D-glucose was dependent on hexose initial concentration. L-arabinose consumption was poor when it was present as the only sugar and in a mixture With D-glucose; this pentose depletion occurred only when all hexose was consumed. When D-xylose and L-arabinose were present in a mixture, the consumption of both pentoses was reduced by the presence of the second sugar, although both sugars were consumed simultaneously by cells. The results show that induction of aldose reductase activity and D-xylose utilization by cells of **Candida** guilliermondii are under control of glucose repression.

L24 ANSWER 7 OF 9 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 95110887 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7811770
TITLE: [Identification of yeasts of the **Candida** genus with a growth inhibition system: Microring YT]. Identificacion de levaduras del genero **Candida** por un sistema de inhibicion del crecimiento: Microring YT.
AUTHOR: Torres-Rodriguez J M; Montsant-Montane L; Madrenys-Brunet N
CORPORATE SOURCE: Unitat de Microbiologia, IMIM, Universitat Autonoma de Barcelona.
SOURCE: Enfermedades infecciosas y microbiologia clinica, (1994 Nov) 12 (9) 439-42.
Journal code: 9104081. ISSN: 0213-005X.
PUB. COUNTRY: Spain
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: Spanish
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199502
ENTRY DATE: Entered STN: 19950217
Last Updated on STN: 19950217
Entered Medline: 19950209

AB BACKGROUND: It has been observed an spectacular increasing of opportunistic **Candida** yeast infections. Many of them are fatal, and rapid and effective identification of the infecting species contributes to start the correct treatment. Several new methods for yeast

identification have become available; Microring YT is one of these methods based on the growth inhibition by 6 different **chemical products**. The aim of this work is to study the performance of the test using representative clinical yeast isolates. METHODS: A total of 146 strains belonging to the 5 most common **Candida** species isolated in the clinical laboratory were identified using conventional methods (germ tube and chlamydospores production, and the standard API 20C AUX and 16 sugars auxonography; Institute Pasteur) and the Microring YT System. This test uses the differing susceptibilities of yeast to 6 discs mounted on a filter paper ring. The **chemical products** and dyes are: janus green, ethidium bromide, triphenyl tetrazolium chloride, brilliant green, cycloheximide and rhodamine 6G. The inhibition pattern of a 6 digit code is compared with a list of profiles. RESULTS: Using the Microring YT system 112 of the 146 studied strains were correctly identified with an overall concordance of 77% between this method and the standard one. The morphological study (germ tube production) increased 6% the identification of **Candida** albicans. Better results were obtained with C. krusei and C. parapsilosis (85% of concordance). With C. glabrata only 59% of concordance was found. CONCLUSIONS: In spite Microring YT is a simple method, easy to perform and read, it was considered inadequate for the identification of **Candida** species as a routine microbiological procedure.

L24 ANSWER 8 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 1991:150129 BIOSIS
DOCUMENT NUMBER: PREV199140069734; BR40:69734
TITLE: EMERGING APPLICATIONS OF THE METHYLOTROPHIC YEASTS.
AUTHOR(S): WEGNER G H [Reprint author]
CORPORATE SOURCE: RES DEV, PHILLIPIS PETROLEUM CO, BARTLESVILLE, OKLA 74004, USA
SOURCE: FEMS Microbiology Reviews, (1990) Vol. 87, No. 3-4, pp. 279-284.
Meeting Info.: 6TH INTERNATIONAL SYMPOSIUM ON MICROBIAL GROWTH ON C1-COMPOUNDS, GOETTINGEN, WEST GERMANY, AUGUST 20-25, 1989. FEMS (FED EUR MICROBIOL SOC) MICROBIOL REV.
CODEN: FMREE4. ISSN: 0168-6445.
DOCUMENT TYPE: Conference; (Meeting)
FILE SEGMENT: BR
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 23 Mar 1991
Last Updated on STN: 23 Mar 1991

L24 ANSWER 9 OF 9 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 1988:137771 BIOSIS
DOCUMENT NUMBER: PREV198885072598; BA85:72598
TITLE: INDUCTION OF XYLOSE REDUCTASE AND XYLITOL DEHYDROGENASE ACTIVITIES IN PACHYSOLEN-TANNOPHILUS AND **PICHIA** -STIPITIS ON MIXED SUGARS.
AUTHOR(S): BICHO P A [Reprint author]; RUNNALS P L; CUNNINGHAM J D; LEE H
CORPORATE SOURCE: DEP ENVIRON BIOL, UNIV GUELPH, GUELPH, ONTARIO, CANADA N1G 2W1
SOURCE: Applied and Environmental Microbiology, (1988) Vol. 54, No. 1, pp. 50-54.
CODEN: AEMIDF. ISSN: 0099-2240.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 12 Mar 1988
Last Updated on STN: 12 Mar 1988

AB The induction of xylose reductase and xylitol dehydrogenase activities on mixed sugars was investigated in the yeasts Pachysolen tannophilus and

Pichia stipitis. Enzyme activities induced on D-xylose served as the controls. In both yeasts, D-glucose, D-mannose, and 2-deoxyglucose inhibited enzyme induction by D-xylose to various degrees. Cellobiose, L-arabinose, and D-galactose were not inhibitory. In liquid batch culture, P. tannophilus utilized D-glucose and D-mannose rapidly and preferentially over D-xylose, while D-galactose consumption was poor and lagged behind that of the pentose sugar. In P. stipitis, all three hexoses were used preferentially over D-xylose. The results showed that the repressibility of xylose reductase and xylitol dehydrogenase may limit the potential of yeast fermentation of pentose sugars in hydrolysates of lignocellulosic substrates.

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PubMed Central

☐ **1:** Mattanovich D, Gasser B, Hohenblum H, Sauer M. Related Articles, Lin

Stress in recombinant protein producing yeasts.
J Biotechnol. 2004 Sep 30;113(1-3):121-35. Review.
PMID: 15380652 [PubMed - indexed for MEDLINE]

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PMID: 15269428 [PubMed - indexed for MEDLINE]

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☐ **4:** Olsen D, Yang C, Bodo M, Chang R, Leigh S, Baez J, Carmichael D, Perala M, Hamalainen ER, Jarvinen M, Polarek J. Related Articles, Lin

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Zhongguo Yi Xue Ke Xue Yuan Xue Bao. 2001 Apr;23(2):176-80. Review. Chinese.
PMID: 12905898 [PubMed - indexed for MEDLINE]

☐ **6:** Hoppensteadt D, Walenga JM, Fareed J, Bick RL. Related Articles, Lin

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PMID: 12627673 [PubMed - indexed for MEDLINE]

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J Exp Bot. 2002 Apr;53(370):865-74. Review.
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Semin Thromb Hemost. 2001 Aug;27(4):337-48. Review.
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Mol Biotechnol. 2000 Sep;16(1):23-52. Review.
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☐ **12:** Fischer R, Drossard J, Emans N, Commandeur U, Hellwig S. Related Articles, Lin

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